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Reasoning, Argumentation and Rationality

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Abstract
Recent "argumentative approaches" in the study of reasoning are deemed by many to offer the most promising avenue in this field. Such approaches provide good theoretical grounds for the idea that reasoning is argumentative in nature and a large body of evidence supporting it. My aim here is to examine to what extent the idea that reasoning is argumentative in nature, and its implications, have been developed by the main argumentative approaches to reasoning. I will then consider whether and how more could be done to elaborate upon these claims. As I will try to argue, in reducing the connection between reasoning and argumentation to the fact that reasoning produces convincing arguments, these approaches mainly highlight reasoning's persuasive and therefore instrumental function. I then conclude by proposing an alternative argumentative conception of rationality, outlined by Paul Grice and recently discussed by Marina Sbisà, which highlights reasoning's reason-giving function.

Keywords
Argumentation, reasoning, argumentative rationality, instrumental rationality, reason-giving

1. *Introduction*

Reasons matter in many situations of one's life, be they private or public. Anyone engaged in a dialogical situation is likely to want to provide reasons in support of her opinions and claims and to evaluate others' reasons for their opinions and claims. In giving and evaluating reasons we engage in a reasoning process: we make connections between premises and conclusions and judge whether a certain set of premises provides good reasons to accept a certain conclusion. By contrast with such a dialogic process we see that in today's public debates, such as television political debates, opponents are engaged rather in exchanging "arguments" whose aim is to persuade one's target audience, irrespective of whether such arguments are well-grounded. Since antiquity philosophers have been strongly interested in distinguishing between good and bad arguments; think, for example, of Aristotle's work on syllogistic reasoning in his *Prior Analytics* and *Sophistical Refutations*. As a matter of fact, the study of reasoning and argumentation has been central to philosophy and its branches ever since. In the last century, however, reasoning and argumentation have been studied independently by cognitive psychologists and argumentation theorists

respectively. While their lines of research have been running in parallel, without addressing each others' studies, for thirty years, they have recently been brought together thanks to the development of argumentative approaches to reasoning in various fields of research, particularly cognitive psychology and analytic philosophy. Such approaches provide good theoretical grounds for the idea that reasoning is argumentative in nature and a large body of evidence supporting it. This may be taken to suggest that human rationality itself has an essential connection to argumentation. My aim here is to examine to what extent the idea that reasoning is argumentative in nature, and its implications, have been developed by the main argumentative approaches to reasoning and whether and how more could be done to elaborate upon it.

The paper unfolds as follows: In Section 2, I briefly describe the state of the art in psychological studies on reasoning and in argumentation theory, and then turn to today's most influential argumentative approaches to reasoning. In Section 3, I examine how rationality appears to be conceived in these approaches and conclude that by attributing a persuasive function to reasoning they assume an instrumental conception of rationality. In Section 4, I argue that the reduction of the argumentative function of reasoning to that of producing convincing arguments does not fit the project of viewing reasoning as basically argumentative in nature. I conclude by presenting a conception of rationality, outlined by Paul Grice (1991; 2001) and recently discussed by Marina Sbisà (2006; 2007), that, in my view, may account for the argumentative nature of reasoning by highlighting its reason-giving function.

2. *Argumentative approaches to reasoning*

Reasoning and argumentation have been studied by different research traditions over time.

On the one side, in the last few decades reasoning has been the subject of intensive psychological and philosophical investigation. In this interdisciplinary field of research, a great deal of interest has been directed towards the results of experimental studies on how people actually reason. These studies show that people systematically depart from the standard models of rationality, i.e. deductive logic, standard probability theory and expected utility theory, failing to solve even very simple reasoning tasks, such as assessing the logical validity of an argument, deciding what evidence one needs to test a conditional rule, estimating the posterior probability of a hypothesis on the basis of the evidence provided, and so on (see, e.g., Gilcovich, Griffin and Kahneman 2002). Some psychologists initially held that, on the basis of the evidence collected, people may be regarded as basically irrational. However, in the current debate, leading theories, especially

evolutionary, ecological and dual-system theories, maintain that reasoning which seems to be irrational can be judged as being perfectly rational, on the condition that it is evaluated according to the appropriate normative standards, such as evolutionary or ecological ones (see respectively Cosmides and Tooby 1992; Gigerenzer 2000; Evans and Over 1996; Stanovich 1999).

On the other side, argumentation has been widely studied by logicians and linguists. In current studies on argumentation, two main strands of research can be identified, which focus on argument-as-product and argumentation-as-process respectively. The first strand of research, which carries on the works of Chaim Perelman and those of Stephen Toulmin (see respectively Perelman and Olbrechts-Tyteca 1958; Toulmin 1958), aims to identify and evaluate the structures of arguments occurring in ordinary conversation on the basis of (depending on the theory at hand) their persuasiveness, appropriateness, relevance and so on. This strand of research includes, among others, approaches to argumentation such as informal logic (for an overview see Johnson and Blair 2000) and critical thinking (see, e.g., Ennis 1962; Siegel 1988). Frans van Eemeren and Rob Grootendorst's pragma-dialectical theory and Douglas Walton's *New Dialectic* are the leading theories of the second line of research (see respectively van Eemeren and Grootendorst 2004; Walton 1998). Both these theories study argumentation as a discourse activity. While the pragma-dialectical theory considers argumentation as a "complex speech act aimed at convincing a *reasonable critic*" (van Eemeren and Grootendorst 2004, 2), *New Dialectic* maintains that arguments should be assessed according to different standards depending on the types of dialogue in which they occur.

There have been only few attempts to study reasoning and argumentation jointly, particularly in the psychological domain: while argumentation theorists usually acknowledge that reasoning is related in some ways to argumentation, psychological studies on reasoning as traditionally conceived consider reasoning to be an inner mental activity aimed at forming true beliefs (epistemic rationality) and maximizing one's personal utility (practical rationality). Recently, however, some scholars, in fields such as cognitive psychology and analytic philosophy, have argued that reasoning and argumentation are so strictly related that the former cannot be studied detached from its place of occurrence, that is, dialogical, argumentative situations, regardless of whether reasoning is considered to be cognitive or social (see Haidt 2001; Hahn and Oaskford 2006; 2007; Mercier and Sperber 2011a; Dutilh Novaes 2013). Particularly, if reasoning is so conceived, some of the so-called biases found in psychological experiments concerning reasoning can be reassessed as effective argumentative moves or be shown to be due to factors other than people's supposed poor reasoning competencies, such as the particular conditions in which they are asked to reason, their lack of

acquaintance with particular dialogical and argumentative practices, their initial conviction in the claim corresponding to the conclusion of the argument (e.g., in the case of *belief bias effect*) and so on. In what follows, I will present the four theories that have contributed to the development of this new field of research in the last years.

2.1. *The argumentative theory of reasoning*

Hugo Mercier and Dan Sperber have recently proposed a psychological theory of reasoning, which connects reasoning with argumentation, labeled the "argumentative theory of reasoning". According to them, "the emergence of reasoning is best understood within the framework of the evolution of human communication" (Mercier and Sperber 2011a, 60). In their view, reasoning has evolved not to help people getting better at thinking on their own, but to provide arguments supporting their claims and to evaluate those provided by their interlocutors in dialogical contexts. In Mercier and Sperber's words, "reasoning has evolved and persisted mainly because it makes human communication more effective and advantageous" (Mercier and Sperber 2011a, 60): its main function is to successfully change our interlocutors' minds and to acquire reliable information from them, limiting the risk of being misled.

As to the workings of reasoning, Mercier and Sperber maintain that in our minds two different kinds of inferential activity take place, which they call respectively *intuitive* and *reflective inferences*, and that only the latter amounts to full-fledged reasoning. While intuitive inferences are the result of the inferential processes carried out by the domain-specific cognitive modules composing the human mind, reflective inferences are the indirect output of one of these modules, the so-called "argumentative module". Intuitive inferences are so ubiquitous that they are considered to be unconscious and uncontrollable, taking place silently at a sub-personal level. When we are conscious of having reached a certain conclusion, but not of the inferential process that has led to it, we say that an intuitive inference has taken place since we are not aware of the reasons supporting its conclusion. However, we rarely question whether intuitive conclusions are well-grounded or not, since we consider what comes from the workings of our minds as perfectly reliable, and so we accept such conclusions as they appear in our consciousness. When activated, the argumentative module, as any other mental module, generates intuitive inferences, which are, however, of a special kind, because they amount to intuitive representations about whether a certain conclusion is well supported by the reasons provided to accept it (that is, its premises and their connection with that conclusion). Since the argumentative module provides representations about the connection between premises and conclusions, which are themselves representations, Mercier and Sperber take it to

be a metarepresentational mechanism. Starting from the outputs of the argumentative module, reflective inferences, which, as said before, amount to full-fledged reasoning, take place when we "accept a conclusion because of an argument in its favor that is intuitively strong enough [...]", "construct a complex argument by linking argumentative steps, each of which we see as having sufficient intuitive strength [...], and "verbally produce the argument so that others will see its intuitive force and will accept its conclusion [...]" (Mercier and Sperber 2011a, 59): in so doing, we can be said to be conscious (at least, to a certain extent) of the reasons for drawing a certain conclusion and of their relationship. Characterized in this way, reasoning is taken to have enabled humans to argue with each other, thus serving a fundamental social, but also cognitive, function.

According to Mercier and Sperber's evolutionary hypothesis, reasoning has evolved and persisted until today just because its function has been that of facilitating humans to argue for their claims and to evaluate each others' arguments. Particularly, it facilitates our ways of giving and evaluating reasons in dialogical situations where people, while disagreeing, are disposed to change their opinions when good arguments are presented. On the contrary, when one is thinking on one's own (and does not take into account other perspectives), or takes part in non-deliberating groups, that is, groups in which people are not interested in comparing their opinions with those of their interlocutors, reasoning will be not helpful. As suggested by Mercier and Sperber (2011a, 63-66), in such cases people exhibit the so-called "confirmation bias", that is, the tendency to favour evidence that supports their own opinions, leading to a strong reinforcement of their attitudes. When this happens, we can observe well-known phenomena such as individual and group polarization. By contrast, argumentative moves inspired by the confirmation bias can be taken to be effective when they occur in deliberating groups because they offer people with evidence in support of their claims, in view of attacks or criticisms on the part of an opponent. More generally, according to Mercier and Sperber most of the failures in reasoning tasks are not caused by people's poor reasoning competencies but depend on the abnormal conditions in which they are asked to reason, if compared with the function according to which reasoning has evolved to serve. Experimental subjects are indeed asked to reason in isolation without the possibility of genuinely debating with others.

2.2. *The dialogical nature of deductive reasoning*

While Mercier and Sperber study reasoning in general, arguing for its evolutionary origins in argumentative contexts, Catarina Dutilh Novaes (2013) focuses on our ability to reason deductively and its relationship to argumentation, claiming that

deductive reasoning should be seen as a cultural product, not as an heritage of human evolution. According to Dutilh Novaes there are good historically and psychologically grounded reasons to take deductive reasoning to be a particular form of argumentative practice, and so she argues that we should not see people as innately equipped with deductive skills, but rather that they acquire them thanks to specific training, particularly in the context of formal schooling. Dutilh Novaes (2013, 461) asserts that, while deductive logic has emerged as a specific way of arguing and debating since ancient Greece, in the last three centuries, particularly after the spread of Kant's critical philosophy, there has been a wide agreement that its rules play a normative role in our mental activity, internalizing them into the human mind. In her view there are two basic components on which deductive reasoning is grounded, which may be said to be argumentative in nature: "(1) the willingness to reason from premises regardless of one's doxastic attitude towards them; (2) the formulation of indefeasible arguments, where the premises necessitate the truth of the conclusion" (Dutilh Novaes 2013, 461). Seen in this way, deductive reasoning represents a particular form of adversarial dialogue in which a proponent puts forward an argument so as to prompt her opponent to accept its conclusion if she accepts its premises. In this dialogical situation, although proponent and opponent start by agreeing on some statements, acknowledging them as the premises of the argument, the former aims to show that the claim she supports follows from these premises necessarily, while the latter tries to find counterexamples to this claim, that is, cases in which the premises hold but the conclusion does not, thus undermining the conclusion. Obviously, by formulating an indefeasible argument the proponent is almost certain to beat her opponent because, provided that the latter accepts the premises of the argument, she must accept the conclusion that follow from them necessarily: as a matter of fact, in a valid deductive argument the truth of the premises makes the truth of the conclusion necessary.

In support of her socio-cultural account of the origins of deductive reasoning, Dutilh Novaes provides evidence about its historical emergence and the ways in which one can get acquainted with its two basic components.

From a historical point of view, studies on the origins of deductive logic suggest that a crucial role in its development has been played by debating practices which emerged in the early Academy and were developed and formalized in Aristotle's *Prior Analytics* (see Dutilh Novaes 2013, 461-62). As suggested by Dutilh Novaes, both components of deductive logic can be found in such dialectical practices. While (1) amounts to the traditional move of granting the opponent's premises "for the sake of the argument", (2) is concerned with drawing a conclusion from a set of mutually accepted premises in light of the property of truth-preservation which characterizes deductive arguments.

From a developmental perspective, Dutilh Novaes holds that the emergence of deductive skills depends upon people's engagement with specific dialogical and argumentative practices, which they learn to master in the context of formal schooling. As to the component (1) of deductive logic, she makes reference to the work of Sylvia Scribner (1977), according to whom one way (among many) that schooled people differ from unschooled people is that the former are more prone to draw conclusions from premises that are not in line with their beliefs and experiences, since in class situations they learn to accept teachers' statements as true in order to reason with them. By contrast, as suggested by Luria's pioneering studies on Uzbekistan peasants' deductive skills (see Luria 1974), unschooled people are normally not disposed to reason leaving aside their own beliefs and experience and so refuse to draw conclusions from unfamiliar premises. While component (i) depends on the acquisition of what Sylvia Scribner characterizes as an analytic orientation in one's mode of thinking, the ability to formulate indefeasible arguments requires stronger training, e.g. by learning to make mathematical demonstrations. Interestingly, Dutilh Novaes (2013, 477) maintains that formulating an indefeasible argument can "[…] be seen as a specific 'language game' that must be learned to be played correctly": only when engaged in such a language game, we are interested in whether our interlocutors have presented a deductively valid argument, that is, an argument in which, if all of its premises are true, then its conclusion must be true also, since when engaged in a discussion we normally only expect to deal with plausible arguments. However, Dutilh Novaes (2013, 476-79) underscores that there are also other social practices such as pretence play, storytelling and betting, which, while being not connected with school teaching, may help to improve schooled, as well as unschooled, people's acquaintance with the two basic components of deductive logic: particularly, by engaging in pretence play and storytelling one may learn to assume premises regardless of her doxastic attitude towards them, while by engaging in betting one is exposed to adversarial communication, which is a key ingredient for formulating indefeasible arguments.

2.3 *Jonathan Haidt on moral reasoning*

Nearly fifteen years ago, Jonathan Haidt developed what he calls the "social intuitionist model of moral judgment", which has become in few years one of the most prominent and debated approaches to moral judgments in the field of moral psychology. Although his theory is not concerned primarily with reasoning, his way of conceiving moral reasoning has been very influential in the development of the argumentative approaches to reasoning. In contrast with the traditional model, according to which moral judgments are the result of one's conscious

reasoning activity, Haidt holds that moral judgments, with few exceptions, are caused by "quick moral intuitions" (Haidt 2001, 817). In his view, our minds possess intuitive heuristics which give rise to specific affective reactions (i.e., good/bad or like/dislike judgments) when we are asked to judge moral issues or cases. Such judgments, which are evaluative with regards people's actions or characters "[...] are made with respect to a set of virtues held to be obligatory by a culture or subculture" (Haidt 2001, 817). For example, following one of Haidt's examples, an act of incest evokes a sense of revulsion in people because they intuitively find some wrong with it (see Haidt 2001, 814). However, they do not know how they have arrived at such a judgment because it appears suddenly and effortlessly in their consciousness.

Consider now moral reasoning. According to Haidt, we engage in reasoning only when a justification is required to give public support to our moral judgments. In such cases, using Haidt's own metaphor, we become lawyers trying to build a case rather than judges searching for the truth (Haidt 2001, 814). In particular, moral reasoning is taken to be an effortful and conscious process which is performed after a moral judgment is made, to give a *post hoc* justification in support of it (see Haidt 2001, 822-823). Since such *post hoc* justifications are directed at one's interlocutors, moral reasoning can be also performed to influence their moral intuitions (and hence their moral judgments). However, what influences others' intuitions is not the validity or goodness of the arguments put forward to support our own moral judgments, but rather their capacity to activate "[…] new affectively valenced intuitions in the listener" (Haidt 2001, 819).

Interestingly, according to Haidt there do exist (a few) cases in which moral judgments are caused by reasoning: that happens, for example, when intuitions are in conflict or when a deeper examination of the moral case or issue in question is required by the social context in which we are involved (see Haidt 2001, 820). Furthermore, in some occasions we may reason privately but, as he observes, solitary moral reasoning is not very effective in overriding our initial intuitive judgments, since we rarely reason in order to question our attitudes or beliefs. When the overriding takes place, it is because "[…] the initial intuition is weak and processing capacity is high" (Haidt 2001, 819). By contrast, most of the time we falsely believe that we have changed our minds thanks to conscious reasoning, while what we assume to be a reasoned change in view is caused by other social or affective factors (see Haidt 2001, 823).

In summary, according to Haidt, intuition is the default mode of thinking in the moral domain, giving rise to moral judgments which are rapid, effortless and easy. Moral reasoning occurs in two different ways: while its standard use is to give justificatory support to pre-existing moral judgments, in other cases we rely on moral reasoning, or believe ourselves to have relied on it, in order to derive moral judgments. However, accepting uncritically our own moral intuitions is not always

the best way of approaching moral cases or issues. As suggested by Jonathan Baron (1998), there is strong evidence that when people trust their own intuitions their resulting decisions, particularly in public policy's issues, can lead to disastrous consequences (see Haidt 2001, 815). So, Haidt's theory is concerned with how moral judgments are made, but not with whether they are well-grounded. In this sense, it is neutral about whether moral judgments caused by moral intuitions are better than those derived by reasoning.

2.4. *The Bayesian approach to argument strength*

While the previous argumentative approaches to reasoning are all descriptive, not taking a position on whether a specific instance of argument can be said to be well-grounded or not, Ulrike Hahn and Mike Oaksford (2006; 2007) develop a Bayesian framework for assessing argument strength, which is clearly normative.[1] This framework is supposed to account for and predict the capacity of reasons to weaken or strength the audience's degree of conviction in the claims which are taken to be supported by them.

Since in ordinary life arguments are presented to convince the audience of a certain standpoint, in order to evaluate them as good or bad we should determine the audience's ultimate degree of conviction in the proposition expressed in the standpoint, that is, their degree of conviction after the argument put forward to support the standpoint has been presented. It is clear, however, that the same argument may be convincing for one interlocutor but not for another, in light of their prior conviction in its conclusion. Therefore, according to Hahn and Oaksford (2007, 706-707) what matters in such situations is the degree of change caused by the argument in the audience, which they call the force or strength of the argument. Force or strength is distinguished from convincingness, which is characterized as the ultimate degree of conviction in the claim supported by such an argument. Interestingly, Hahn and Oaksford hold that both degree of conviction and degree of force can be quantified within a Bayesian framework. Within such a framework, an argument is taken to be composed by a claim, amounting to the hypothesis to be tested, and some reasons supporting it, which are the relevant pieces of evidence available. If we think of claim and reasons as associated to probabilities, interpreted as one's subjective degrees of belief that

1 Hahn e Oaksford's account is strictly connected with the Bayesian approach to human reasoning and rationality that Oaksford itself, with the collaboration of Nick Chater (see, e.g., Oaksford and Chater 2007), has developed over the last twenty years on the basis of John R. Anderson's work on rational analysis (see Anderson 1990).

the claim is true, thanks to Bayes' Theorem we can quantify the audience's degree of confidence in the claim after the reasons which are put forward to support it have been presented. This hence determines the audience's ultimate degree of conviction (its convincingness), which amounts to the posterior probability of the claim being true.[2] As when new relevant evidence is presented the degree of belief in an hypothesis may be strengthened or weakened, the same happens when reasons are presented in support of a claim. Since the degree of confirmation provided by new relevant evidence is characterized as the difference between the posterior and prior probability of a hypothesis, the force or strength of an argument can be described as the discrepancy between the prior conviction in the claim (the audience's initial conviction in the claim) and the ultimate degree of conviction in it (the audience's conviction in the claim after the argument has been presented).

As Hahn and Oaksford underline, the same argument can have different strength in light of the audience to which it is directed. To determine how convincing the argument is, indeed, we must take into account the audience's initial conviction in the claim at issue (its prior subjective probability), the qualities of the reasons put forward to support it (e.g. the trustworthiness of their sources) and the relationship between the claim and such reasons, as Bayes' Theorem clearly suggests when applied to hypothesis-testing cases. According to Bayes' Theorem, indeed, the higher the degree of belief in an hypothesis, the higher is the likelihood that the evidence we have in its favour is the case when the hypothesis is true as opposed to false. Hahn and Oaksford claim that thanks to their Bayesian framework phenomena, such as the acceptance of fallacies and the persuasiveness of some types of messages, can be accounted for. According to their analysis, an argument is said to be fallacious not because of its structure, as traditional work on fallacies has assumed, but because it occupies "[…] the extreme weak end of the argument strength spectrum given the probabilistic quantities involved" (Hahn and Oaksford 2007, 725).

In support of their Bayesian framework, Hahn and Oaskford have provided a body of experimental evidence suggesting that people's normative intuitions about argument strength, particularly fallacious arguments, appears to be consistent with those derived from their analysis (see Hahn and Oaksford 2006; 2007). As a consequence, this theory can be said to be normative not only in the sense that it provides a normative framework for assessing argument strength but also because it can predict people's judgments about how convincing an argument is. Obviously this does not mean that people are "Bayesian evaluators": rather, it

2 Stated in terms of hypothesis testing, Bayes' Theorem specifies how a hypothesis should be revised in the light of new relevant evidence.

is the Bayesian framework aims to reflect their evaluations of the strength of arguments.

3. *What kind of rationality is assumed by the argumentative approaches to reasoning?*

While differing substantially from one another, all the above-described theories agree that the function of reasoning should be rethought, converging on the idea that reasoning is argumentative in nature. In so doing, they assume, at least implicitly, that a distinction should be made between immediate, automatic inferences, which take place at a sub-personal level, and full-fledged reasoning, which instead involves the ability to consciously provide reasons in support of one's claims. Although this distinction may seem to be merely a matter of terminology, it has a strong impact on the way that reasoning is studied empirically. Traditionally cognitive psychologists consider subjects' responses in experimental tasks, which are supposed to require reasoning activity to be solved, as determined by some inferential processes. They then debate how these alleged inferential processes can be appropriately described. In the long run, this way of studying reasoning has led cognitive psychologists to consider any cognitive process that is supposed to be inferential, particularly well-known heuristics processes, as an instance of reasoning. As a consequence, human reasoning has been taken to be a self-centered cognitive activity which is performed privately within one's mind. Over the last decades or so, however, things have been gradually shifting away from focusing exclusively on subjects' responses to focusing also on their ways of justifying such responses has been made. As highlighted by Jos Hornikx and Ulrike Hahn (2012, 229)

> there is ample evidence [...] that attempts to understand our 'reasoning' ability—that is, our ability to evaluate individual premise–conclusion connections—must take into account that, in our everyday lives, such reasoning is typically embedded in broader argumentative contexts [...].

If reasoning is typically done interpersonally, taking place in "broader argumentative contexts", its function should be found within its place of occurrence. As experimental data reported by Mercier and Sperber (2011a) suggest, many reasoning tasks, in which people tend to give wrong answers if approached in isolation, are more frequently solved correctly when they are presented to groups and the participants are asked to discuss their solutions collectively. Therefore reasoning may be deemed to have its natural environment in argumentation. Consider in particular the two following experimental findings.

As reported by Mercier and Sperber (2011a, 61), when taken in isolation subjects are not usually able to apply nor recognize the well-known *modus tollens* (if *p* then *q*, not-*q*, so not-*p*), despite the fact that it is the simplest argument form after the *modus ponens*. However, if asked to engage in argumentative dialogues participants have been shown to recognize and easily apply *modus tollens* in order to question the claims made by their opponents. Similarly, although only about 10% of subjects solve the standard version of the selection task correctly, if asked to discuss its solution with others about the 70% of the subjects give the correct response (Moshman and Geil 1998). These and other similar experimental results (for a review see Mercier and Sperber 2011a, 61-66) suggest that reasoning works better when performed in argumentative contexts because it is set to serve argumentative ends. But what does it mean "to serve argumentative ends"? Mercier and Sperber's approach, as well as the other argumentative approaches we have examined above, fail to give a clear answer to this question. Saying that reasoning has an argumentative function may be interpreted in (at least) two different ways: it may amount to the attribution of a persuasive function or of a reason-giving one. According to Mercier and Sperber (2011b, 96), reasoning produces convincing arguments to change other people's minds, enabling us to achieve desirable effects in them. We can therefore assume that according to their theory, reasoning, in argumentative contexts, plays a persuasive function. We cannot say anything about whether Dutilh Novaes attributes a persuasive or a reason-giving function to our ability to reason "in general", because she is interested exclusively in deductive reasoning conceived as a dialectical practice. We do know, however, that according to her, we can put opponents on our side thanks to this practice, insofar as we can show that the claim supported by us follows necessarily from some mutually shared premises. As a consequence, we can assume that she acknowledges a persuasive function to deductive reasoning as a dialectical practice. Haidt's approach to moral reasoning has an ambiguous position as to the function of reasoning. According to Haidt, reasoning helps us to justify our intuitive judgments to others by providing post-hoc rationalizations of these judgments. At first sight, his theory can be taken to attribute a reason-giving function to reasoning, since it focuses on people's efforts in justifying their already-made judgments. However, Haidt also holds that in justifying an already-made judgment we usually aim at convincing our audience that this judgment is well-grounded, irrespective of whether it may be or not, by activating "new affectively valenced intuitions" in them (Haidt 2001, 819). In other words, according to him reasoning plays a fundamental role in our attempts to influence others' moral intuitions, which amounts to recognizing it as having a persuasive function. Putting together the two characterizations provided by Haidt, we can say that the persuasive function prevails over the reason-giving function because he strongly stresses the role of reasoning in "convincing" and "influencing" one's

audience. Lastly, in Hahn and Oaskford's Bayesian framework, it is taken for granted that we reason to convince others of our standpoints and so their theory is also based on the idea that reasoning has a persuasive function. In sum, according to all these approaches, reasoning, be it a cognitive or a social activity, is taken to be a strategic instrument that makes us competitive when confronted with other arguers. It can be said to be strategic, because through it we can achieve valuable goals, such as convincing others of our standpoints or defending ourselves from their similar attempts, that might otherwise be too difficult or even impossible to achieve with other cognitive or social instruments.

Not only are the supporters of these approaches not too clear about the function of reasoning, but they also set aside the question of how the connection between reasoning and argumentation should be brought to bear on the characterisation of rationality. On the basis of what we have seen so far, however, we can assume that these approaches take for granted that rationality focuses on means-end relations: we are rational because we are equipped with reasoning, which can be inherited genetically or acquired through experience or education, and thanks to which we produce convincing arguments for changing the others' minds. It is, in other words, an instrumental conception of rationality. Indeed, insofar as reasoning is taken to be a good instrument, be it cognitive or social, to convince others to change their minds, the above-described argumentative approaches attribute an instrumental value to it. The value of reasoning is derivative on the value which people attribute to changing other people's minds. If people had never been interested in changing other people's minds, or if providing them with arguments would not have proven to be a good means to this end, reasoning would not have become a permanent component of our cognitive or social repertoire. Similarly, if people had found an alternative, easier and more effective way of changing other people's minds, reasoning would have been left aside and replaced by this alternative method. In sum, according to this instrumental conception the effectiveness of reasoning amounts to its capacity to lead our audience to believe our opinions and claims: by relying on it we, both as proponents and opponents, aim at achieving the best results in competitive, dialogical situations. It should be noted that while this position can be attributed to Mercier and Sperber and to Hahn and Oaksford in a strong sense, it belongs to Dutilh Novaes and to Haidt only in a weaker one. As stated previously, in focusing on deductive reasoning, Dutilh Novaes can be taken to ascribe an instrumental function to it, but she does not take any stance as to the origins of our "general" ability to reason or on why reasoning has evolved. As to Haidt's approach to moral reasoning, we can assume that it is grounded on an instrumental conception of rationality only insofar as, in it, the persuasive function prevails over the

reason-giving one. However, a tendency to conceive rationality in instrumental terms is shared by all the four approaches.

4. *Argumentative rationality*

By focusing upon the persuasive function of reasoning, the above-described argumentative approaches do not fully develop the implications of the connection between reasoning and argumentation. While there can be two different ways of conceiving the function of reasoning, as either a persuasive or a reason-giving function, they stick to the former and, in so doing, appear to presuppose an instrumental conception of rationality. According to this conception, giving justificatory support to one's moves is not valuable *per se* but only insofar as it succeeds in convincing other people of one's opinions and claims. The question is then whether this way of conceiving rationality fits the project of viewing reasoning as basically argumentative in nature. Insofar as the argumentative function of reasoning is equated to its capacity to produce convincing arguments that influence or change other people's minds, reasoning works as a persuasive device whose aim is to achieve goals which people find valuable. But in doing so, the argumentative approaches lose the opportunity given by the connection between reasoning and argumentation to detach the former from the individualistic function which has been traditionally attributed to it by philosophers and psychologists. This can be clearly seen in Mercier and Sperber's position. On the one hand, they criticize the traditional, individualistic conception of reasoning, holding that reasoning is not merely strategic in the sense of helping us, as individual reasoners, to enhance our knowledge and to maximize our personal utilities, but because it helps us to produce convincing arguments when challenged in dialogical contexts. On the other hand, by holding that, thanks to their ability to reason, people "[...] argue for whatever it is advantageous to them to have their audience believe" (Mercier and Sperber 2011b, 96), Mercier and Sperber assume that our ways of reasoning depend on what is advantageous to us, that is, pursue our own goals and interests. Reasoning therefore appears to be understood by them to be an instrument serving the achievement of our personal utilities after all. Thus the supporters of argumentative approaches trace the argumentative nature of reasoning back to the purely individualistic component of dialogical situations, that is, the goal of achieving personal advantages from them.

In contrast to this instrumental conception, there is another route one may want to take in elaborating the idea that reasoning is argumentative in nature. If one takes the reason-giving function of reasoning to be more fundamental than its persuasive function, one can avoid assuming an instrumental conception of

rationality and look for a thoroughly argumentative alternative. Indeed, an argumentative conception of rationality inspired by Paul Grice's later works (see Grice 1991; 2001) appears to be a good fit to account for the argumentative nature of reasoning.

A preliminary distinction that must be established here is that between one's ability to reason, that is, the ability to make premises-conclusions connections, and that of producing convincing arguments, which amounts to the ability to change people's minds about anything. These abilities are clearly independent of each other: on the one hand, one may be very good at making premises-conclusions connections, but not necessarily interested in using this ability to produce arguments to convince other people and, on the other, one can succeed in convincing other people with what one says without relying on one's ability to make premises-conclusions connections. Although argumentative approaches, most explicitly Mercier and Sperber's argumentative theory of reasoning, conflate these two abilities into a more general ability to argue, they might have developed for very different reasons, not necessarily linked to one another. Moreover, our ability to argue is much more complicated than the supporters of argumentative approaches assume. Not only we acquire deductive skills thanks to specific training, as suggested by Dutilh Novaes, but also our ability to argue, which does not coincide with our ability to reason, depends on our acquaintance with specific social practices, which involve, among other things, rules and expectations that guide our behavior when engaged in these practices. As suggested by argumentation theorists (cf. Grootendorst, van Eemeren 2004; Walton 1998), these rules and expectations involve, among other things, attributions of entitlement, undertakings of commitments, turn-taking, ways of questioning each others' claims, adoption of standards of precision, and so on. When people do not respect the rules characterizing such practices and are not guided by expectations as to how to proceed when engaged in them, they are engaged in a practice, which may be similar, but not identical, to that of arguing. Obviously, it is a necessary, but not sufficient, condition to be engaged in argumentative practices that one should be able to make premises-conclusions connections. In reasoning, indeed, we make connections between premises and conclusions and judge whether a certain set of premises constitutes good reasons to accept a certain conclusion. This is what can be called the reason-giving function of reasoning. While it is true that if one is willing to be engaged in an argumentative practice, one needs to rely on the ability to reason, it is also true that someone may be interested in giving reasons in support of a certain claim or decision anytime it seems relevant to do so, without any particular further goal (such as that of convincing others of something). However, since we can be interested in justifying our moves in a variety situations, be they public (speaking with others) or private (such as engaging in an inner

dialogue with ourselves), the reason-giving function of reasoning may be considered as primarily communicative. Obviously, this function of reasoning can be exploited to convince others of a certain claim or opinion, and thus become part of a more complex social situation, which may be adversarial or cooperative.

At this point, it is useful to recall Paul Grice's characterization of human rationality as: "a concern that one's moves are justified and a capacity (to some degree) to give effect to that concern" (Sbisà 2006, 241-242; see Grice 1991, 82-83), which has been taken by Marina Sbisà (2006; 2007) to express an argumentative conception of rationality (as opposed to the received instrumental conception). On this view, the value of reasoning does not lie in its persuasive efficacy, but in its reason-giving function. However, a further distinction is to be made between people's concern for justifying their moves and their ability to give effect to this concern, that is, their ability to actually reason. Indeed, while without an ability to reason we cannot give effect to our concern for justifying our moves, without motivations our ability to reason is not useful nor relevant for us.

If we ask why we engage in reasoning, the first response, as suggested by the definition, is that one must care about having reasons for one's moves. A capacity for concern regarding the justification of our own moves develops in us when we begin to realize that we find it valuable to provide reasons in support of what we say and do. One may imagine that it is in order to give effect to this concern that we equip ourselves with a capacity to make premises-conclusions connection, or, at least, that we start finding our ability to make premises-conclusions connection relevant to our aims, both cognitive and social, and worth developing. Our ability to reason, on this view, would then be a response to our concern to provide reasons in support of what we say and do to our interlocutors.

As the experimental works of Keith Stanovich and his collaborators suggest, people's reasoning performances cannot take place if people's reasoning is not activated and supported by their attitudes and dispositions (see West *et al.* 2008; Stanovich 2010). We reason for a variety of motivations: giving sense to our speech or actions, making explicit the premises of what we say or do, collaborating with others, convincing others, or improving our self-image. To achieve these and similar aims, one needs to be supported by one's ability to reason. This does not mean, however, that we possess this ability because it helps to achieve these aims as well as many others: they are not the reasons why we reason as we do.

5. *Conclusion*

The great merit of the argumentative approaches to reasoning we have discussed in this paper is that they highlight the limitations of conceiving of reasoning as

an inner mental activity that makes people get better at thinking on their own, as most psychological theories have done in the last thirty years or so. In doing so, they have also provided good theoretical grounds and a large body of evidence in support of the hypothesis that reasoning has its natural environment in argumentative contexts. But these approaches do not take into consideration the implications that the choice to underline the connection between reasoning and argumentation may have for the characterization of rationality. Focusing on how rationality appears to be conceived by these theories, I have argued that, insofar as they take reasoning to be a strategic instrument thanks to which we can achieve valuable goals, such as convincing others of a certain claim and defending ourselves from their similar attempts, they assume an instrumental conception of rationality. This means that in these perspectives giving justificatory support to one's moves is not valuable *per se* but only insofar as it succeeds in convincing other people of something. However, as these argumentative approaches reduce the argumentative function of reasoning to its capacity to persuade, their way of conceiving rationality does not fit the project of viewing reasoning as basically argumentative in nature.

If, as I have tried to show, the reason-giving function of reasoning is considered to be more fundamental than that of producing convincing arguments, another route can be taken in elaborating the idea that reasoning is argumentative in nature. I have indeed presented an argumentative conception of rationality, inspired by Paul Grice's later works (see Grice 1991; 2001), which, by focusing upon the reason-giving function of reasoning, seems to be able to develop the implications of the connection between reasoning and argumentation more deeply than the argumentative approaches have made from an instrumental point of view. In the perspective inspired by this argumentative conception of rationality, the function of reasoning that can be taken to be primary is not that of producing convincing arguments, but that of justifying one's claims, opinions and other moves, which is sustained by our concern that our moves be justified. In this light, while recognizing that the reason-giving function of reasoning can be exploited to achieve many valuable goals, including that of producing convincing arguments, the suggestion that it may have emerged from our deep concern for providing reasons for our moves appears to be worth consideration.

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